

Decommissioning in NEA Member Countries

Current status: Norway

National policy

Regulation

The Atomic Energy Act of 1972 forms the legal basis for building, operation and decommissioning of nuclear facilities in Norway. When licence was granted to the operator of the research reactors in Norway (Institute for Energy Technology, IFE), one of the requirements was that plans for decommissioning were to be presented a given number of years before the licensing period ended.

Strategy

The plans for decommissioning of the licensed nuclear facilities at IFE were revised in 2004 as a fulfilment of the licensing conditions. According to the renewed licence, as from 2000, detailed plans including cost estimates were to be presented to the authorities four years before the expiry of the licence at the end of 2008.

In principle the decommissioning will follow the stages described by the IAEA (Safety Standards Series No. WS-G-2.1, 1999):

Stage 1 – storage with surveillance,

Stage 2 – restricted site use,

Stage 3 – unrestricted site use.

The relevant facilities are the HBWR reactor in Halden, the JEEP II reactor at Kjeller, the Metallurgical Laboratories at Kjeller and the Radioactive Waste Treatment Plant at Kjeller. For obvious reasons, the Radwaste Plant will be the last facility to be decommissioned.

Decommissioning experience

IFE has experience in decommissioning nuclear facilities. The research reactor JEEP I at Kjeller was in operation 1951-67 and has later been decommissioned to stage 2. The zero power reactor NORA at Kjeller was in operation 1961-68 and has later been decommissioned to stage 3. The Uranium Reprocessing Pilot Plant (URA) at Kjeller was in operation 1961-68 and has later been decommissioned partly to stage 2, partly to stage 3. The decommissioning of URA has been described in an internal IFE-report: J.E. Lundby and K. Frydenlund, "The Uranium Reprocessing Pilot Plant at Kjeller – Second decommissioning period 1988-1990", IFE/I-92/009 (in Norwegian), and in a Nordic Council of Ministers report: J.E. Lundby, "Decommissioning of a Uranium Reprocessing Pilot Plant – practical experiences", TemaNord 1994:594 (in English).

As a part of a joint Nordic cooperation, a case study of the future decommissioning of the reactor JEEP II was performed. This study also included stage 3 and is reported in: K. Neset, G.C. Christensen, J.E. Lundby and G.A. Rønneberg: Decommissioning of a small nuclear reactor, a model study. IFE/KR/E-90/001 (1990) (in Norwegian).

The future detailed decommissioning plans will be based on IFE's own as well as international decommissioning experience.

The Norwegian Radiation Protection Authority, NRPA, will supervise the future decommissioning process, including waste treatment, and assure that the process is done in accordance with plans and procedures.

Radioactive waste management

All the low- and intermediate level radioactive wastes generated from the decontamination and dismantling of IFE's nuclear facilities will be managed at the Radioactive Waste Treatment Plant at Kjeller subsequently transported to the Combined Storage and Disposal Facility for L- and ILW (KLDRA) in Himdalen.

The spent fuel from the reactors will be stored at IFE in existing, specially designed storage facilities until a disposal solution for this type of waste has been found. The Government has appointed an independent expert group to discuss these questions and come up with a document describing different strategies and options for the future storage and final disposal of the spent fuel. The expert group issued their final report in December 2001. The process has continued with further assessments since 2001. However, no further reports have been published.

Funding

The research reactors and other nuclear facilities are partly financed through governmental funds. The decommissioning process will also mainly be financed through funds granted by the Government.

Competent bodies

Operator

Institute for Energy Technology, P.O. Box 40, N-2027 Kjeller, Norway

Authority

Norwegian Radiation Protection Authority, P.O. Box 55, N-1332 Østerås, Norway

Public information

Both the Atomic Energy Act and other laws require openness and active public involvement in the whole process. The operator must actively supply information material to the public about the procedures, safety and environmental aspects. The authority will actively inform about the legal aspects and the findings in evaluations and inspections.